

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION

UNITED STATES, *et al.*,

Plaintiffs,

vs.

GOOGLE LLC,

Defendant.

No. 1:23-cv-00108-LMB-JFA

**REPLY MEMORANDUM IN SUPPORT OF GOOGLE LLC'S
MOTION TO EXCLUDE THE TESTIMONY OF PROF. ROBIN S. LEE**

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INTRODUCTION

As explained in Google’s opening brief, Plaintiffs’ expert Prof. Robin Lee has employed unreliable and inadmissible methods of market definition to come up with his three alleged markets. Lee’s purported markets turn on what he conceives of as “open-web display advertising,” which he views as traditional banner ads that appear on websites and are placed there through third-party-owned ad tech tools. By incorporating into his market definitions a concept created for litigation—an idiosyncratic understanding of “open-web display advertising”—Lee has applied an unreliable method of market definition that conflicts with legal requirements, gerrymanders to exclude major competitors, and leads to absurd results.

Lee unjustifiably claims that his markets comply with the Hypothetical Monopolist Test (“HMT”). But that test cannot support Lee’s markets because he failed to reliably apply the HMT by explicitly refusing to perform any independent quantitative analyses of substitution.

Lee further errs legally by performing an unreliable analysis to assert worldwide geographic markets, and offers inadmissible market share estimates that do not measure shares of the tools in the alleged markets.

ARGUMENT

I. LEE’S PRODUCT MARKETS ARE UNRELIABLE BECAUSE THEY ADVANCE MADE-UP MARKETS FOR TOOLS THAT FACILITATE “OPEN-WEB DISPLAY ADS.”

What Lee has done with his market definitions is sleight of hand. He claims that he does not need to analyze and define a market for “open-web display ads” because the “distinction between the underlying display advertisements and the ad tech tools that facilitate their sale is important.” Opp. Ex. E, ¶ 95.¹ But Lee then uses his assumption that “open-web display ads” are

¹ All references to Ex. 1 through 161 refer to the Declaration of Bryon Becker in Support of Google LLC’s Motion for Summary Judgment and Motions to Exclude, ECF No. 581, Declaration of

“distinct and valuable” to define three markets for ad tech tools based on whether or not they can “facilitate the sale of open-web display transactions” with no analysis of whether and the extent to which customers select multi-functional ad tech tools based on their capacity to serve “open-web display ads.” Ex. 8 at 60:12-22, 93:10-94:1; Opp. 4. The result is market definitions that exclude numerous ad tech competitors, notably Meta (the largest competitor in display advertising) and Amazon (which for years used Google ad tech tools).

A. Lee’s Markets for Tools that Facilitate “Open-Web Display Advertising” Are Unreliable Because There Are No Such Markets.

Lee has proposed markets for ad tech tools that transact “open-web display advertising.” Opp. 4-5. Lee, who had never heard the term before this case, Ex. 8 at 34:6-10, was asked by Plaintiffs to opine on whether Plaintiffs’ proposed markets for tools that facilitate “open web display advertising” are relevant markets, and to “assess whether Google has possessed market power in those markets.” Ex. 1, ¶ 7. So tasked, Lee worked backwards: in order to opine that Google has an outsized share of any so-called market, he concocted a highly idiosyncratic definition of what constitutes “open-web display advertising.” He defines the “open web” as websites that “rely on third-party-owned ad tech products (i.e., products the publishers do not themselves own) to sell their display ad inventory.” *Id.* ¶ 55. In other words, Lee’s definition of “open-web” centers around the publisher’s choice of ad tech tool for serving certain kinds of ads on websites: not whether the publisher is a “walled garden” social media or retail company, which is how DOJ characterizes the term, S.J. Opp. 28, or a publisher that requires a login to enter the

Bryon Becker in Support of Google LLC’s Oppositions to Plaintiffs’ Motions to Exclude, ECF No. 646, and Declaration of Bryon Becker in Support of Google LLC’s Replies in Support of Google LLC’s Motion for Summary Judgment and Motions to Exclude. With respect to quoted material, unless otherwise indicated, all brackets, ellipses, footnote call numbers, internal quotations, and citations have been omitted for readability. All emphasis is added unless otherwise indicated.

website. Lee then defines “display ads” as traditional “banner ads,” excluding “native ads,” “social media” ads, and “instream video ads.” Ex. 1, ¶¶ 49(1), 49(3), 49(4)(C), 56. Taking these together, his term “open-web display ads” refers to traditional banner ads appearing on websites that use third-party-owned ad tech and excludes (1) any ads served by third-party owned ad tech tools appearing in apps or on CTV, (2) any ads on any websites like TikTok, Facebook, or Instagram that use their own ad tech, and (3) native ads or in-stream video ads even when they appear on websites that use third-party-owned ad tech.

Plaintiffs’ other principal expert economist conceded that the term “open-web display ads,” as Lee has constructed it, was created for this case, Ex. 6 at 26:22-28:5; it is not recognized in the ad tech industry, or the digital advertising industry generally, or even by the federal advertising agencies seeking damages in this case. Br. 1, 6-7. Plaintiffs’ expert Dr. Ravi, who has actual expertise in digital advertising, testified he was familiar with the term as referring to open versus closed auctions rather than to anything resembling Lee’s definition. *Id.* at 7. And Plaintiffs do not dispute that their contrived definition of “open-web display advertising” leads to the absurd result that an ad placed by the same advertiser, within the same online article, using the same third-party-owned tool, viewed by the same user will be included in their market definition if viewed on *The New York Times* website today but excluded if viewed in *The New York Times* app, and would have been excluded in the past because *The New York Times* previously used an in-house ad server and was therefore a “closed-web” publisher under Lee’s construct. Br. 2, 4, 15-16.

Nor do Plaintiffs dispute that Lee did not analyze a market for “open-web display ads” even though he excludes Google’s competitors based upon there being such a market. Instead, they treat that market (as Lee has defined it) as self-evident, claiming that “open-web display advertising” is “well-recognized.” Opp. 4, 11. In support, Plaintiffs present a handful of cherry-

picked documents showing those four words in proximity and cite Lee’s testimony that he has “seen documents” where “those four words have been used.” *Id.* at 12; Ex. I at 38:13-39:8. Yet Plaintiffs do not even try to claim that their cherry-picked documents reflect an understanding of “open-web display advertising” as Lee has concocted it, let alone show a “well-recognized” market for “open-web display advertising.” And despite the millions of documents produced in this case, Plaintiffs and their experts have found no documents analyzing a market or competition in a market that reference “open-web display advertising.” Instead, what Google business documents show, time and again, is market analysis reflecting Google “in second place” to Meta with respect to the “display and video market.” Ex. 84 at -947. Lee himself admitted that he was unaware of anyone computing market shares for markets using the term “open-web display advertising” prior to his work in this case. Ex. 8 at 47:9-15 (“I can’t speak to what anyone has ever done”).

Third-party documents and deposition testimony further corroborate that Lee has no support for his made-up definition: there is no industry standard for what constitutes the “open web.” Contrary to Lee’s definition, the phrase can refer both to digital properties other than websites, like apps, *e.g.*, Ex. 149 at 3 (OpenX survey cited by Lee as containing “those words,” Opp. 12, instructs web users taking the survey to define “the open web” as “any online property, website or app that is not owned by a major technology company”), and to websites like Facebook and Instagram that use their own ad tech, *e.g.*, Ex. 150 at 15:24-17:6 (Facebook and Instagram are “available on the open web”); *see also* Ex. 32 at 62:2-63:23. Nor is there an industry standard for what constitutes a “display ad.” The market research company eMarketer, a leading source of industry data and analysis on which Plaintiffs’ experts extensively rely, *e.g.*, Ex. 1 Fig. 4; Ex. 127 Fig. 136; Ex. 145, ¶ 121 n.217, defines display ads much more broadly than Lee as “advertising that appears on desktop and laptop computers as well as mobile phones, tablets, and other internet-

connected devices; includes banners, rich media, sponsorships, video, and ads such as Facebook’s News Feed Ads and Twitter’s Promoted Tweets.” Ex. 151 at Cell Y3; *see also, e.g.*, Ex. 25 at 67:4-69:10 (display ads are “visual ads” and include ads on social media, which Lee categorizes as “native ads” and excludes from his definition). Lee himself acknowledges that “some sources may consider part of native advertising to be a part of display advertising,” and yet Lee excludes native ads from his definition. Ex. 1, ¶ 49(4) n.19. He further admits he is aware of no third-party industry sources that collect or report data on “open-web display ads.” Ex. 8 at 42:3-12.

Turning to the documents Plaintiffs do cite, they willfully ignore the disconnect between passing references to the four words “open,” “web,” “display,” and “advertising” in close proximity to each other and how Lee defines that term, and his claim that, as he has defined it, the term is a “concept well understood by Google and others in the industry.” Opp. 4, 11-13. None of the documents Lee cites support his tortured definition for “open-web display ads” as traditional banner ads appearing on websites operated by publishers using third-party-owned ad tech tools.²

² Not only do none of Plaintiffs’ cited documents support Lee’s highly idiosyncratic definition of “open-web display advertising,” they are also internally inconsistent—even within the same document—as to what those words mean. *See* Opp. Ex. B at -395-96 (discussing “display ads across the open web,” without further explanation, when discussing innovative ad formats for a “mostly-mobile web and app world”); Ex. 156 (Opp. Ex. B) at -340 (“open web” is “the collection of contents and sites, provided by individuals and corporations, that consumers can access through web-browsers on desktop and mobile devices”); *id* at -341 (“open web” does not include “pay-for-access” publishers like the *Wall Street Journal* or *Financial Times*, which are included in Lee’s definition); *id* at -342 (“open web” includes search ads, which are not part of Lee’s “open web”); *id* at -506 (distinguishing “open web” from “mobile web,” which Lee includes in his definition); Opp. Ex. C at -646-47 (stating, without explanation, that there is a “highly fragmented open web display advertising market” in connection with an assessment of the threat of Apple developing an Ads business that includes “traditional formats” like “display, video, native,” and “search ads,” when Lee’s definition excludes in-stream video, native, and search ads); Ex. 157 (Opp. Ex. D) at -366, -368 (including CTV in a discussion of risks for “open web display and video buying platforms (DSPs)” —which, notably, Lee excludes); Opp. Ex. H at 377-78 (referring to “open web display” without defining the phrase and stating “the dynamics of the ad tech marketplace are not” “straightforward”); Opp. Ex. J at -717 (referring to “open web/display” without defining either “open web” or “display”); Opp. Ex. K at -947 (pitch deck from ad tech competitor referring to

In addition to failing to show that Lee’s tortured view of “open-web display advertising” is consistent with any standard, Plaintiffs also fail to show that “commercial realities” of “open-web display advertising” make it “distinct and valuable.” Opp. 11-12. The evidence Plaintiffs cite for such industry recognition instead demonstrates that what Lee deems “open-web display advertising” is reasonably interchangeable with other forms of digital advertising. In Exhibit H, for example, advertising personnel from Meta explain that Facebook’s native advertising and other digital advertising all directly compete, given that “advertisers continuously move resources” between ad formats “to increase the greatest value for their marketing campaigns.” Opp. Ex. H at -377; *see id.* at 378 (AT&T’s acquisition of AppNexus shows “real competition in the online advertising space,” AT&T told DOJ the acquisition was necessary to compete “with us [Facebook] and Google”). Disney testified the “competitive landscape” for its display and video ads includes Facebook, Amazon, Google, and others. Ex. 152 at 97:22-100:6; *see also* Ex. 153 at 741. And Plaintiffs’ Exhibit J lists Google—as a single entity, not broken into separate tools as Lee does in his markets—as part of The Trade Desk’s “digital advertising peer group,” along with Facebook, Snapchat, Twitter, Roku, Pinterest, Magnite, PubMatic, LiveRamp, and Criteo. Opp. Ex. J at -718. *See also* Ex. 86 at 8; Ex. 26 at 22; Ex. 87 at 27.

“Open Web Display Ads” without defining the term but distinguishing it from Facebook and Google Ads (f/k/a AdWords) when Lee includes Google Ads and excludes Facebook).

Even more, every one of these documents establishes competition from major competitors and would-be competitors that Lee excludes based on his definition of “open-web display advertising.” Ex. 156 (Opp. Ex. B) at -391 (listing Facebook alongside OpenX and Criteo as competitors in display advertising); Opp. Ex. C (assessing threat of potential Apple Ads business); Ex. 157 (Opp. Ex. D) at -366, -368 (listing The Trade Desk, Amazon DSP, and Facebook as Google’s competitors); Opp. Ex. H at -377-78 (Meta listing Google and Amazon as its competitors in advertising); Opp. Ex. J at -718 (The Trade Desk’s “digital advertising peer group” includes Google, Facebook, Snapchat, Twitter, Roku, Pinterest, Magnite, PubMatic, LiveRamp, and Criteo); Opp. Ex. K at -947 (competitor’s pitch deck suggesting Google Ads (f/k/a AdWords) and Facebook are direct competitors).

Plaintiffs also ignore that Lee’s opinion is inconsistent with the legal standard, which asks not whether “open-web display advertising” is “distinct and valuable” but rather whether other types of advertising could be reasonable substitutes. *It’s My Party, Inc. v. Live Nation, Inc. (It’s My Party II)*, 811 F.3d 676, 683 (4th Cir. 2016); *see also, e.g., Sardis v. Overhead Door Corp.*, 10 F.4th 268, 294-95 (4th Cir. 2021) (expert testimony excluded when “incompatible” with the legal standard). Although Lee concedes that “substitutability between open-web display advertising and other forms of advertising” could constrain price increases for ad tech tools in his alleged markets, Opp. Ex. E ¶ 96, Lee has not done any market analysis for “open-web display advertising” that would allow meaningful assessment of that substitutability. Lee admits that he has not evaluated substitution among digital advertising. Pls.’ Ex. I at 71:16-72:3 (“I’m not evaluating, for the present market definition, substitution among digital advertising.”).

Lee’s failure to conduct the requisite analysis into the degree of substitutability between “open-web display advertising” and other forms of digital advertising is not mere “semantic nit-picking,” Opp. 12, but a critical—and missing—component to his proposed markets for tools capable of transmitting such ads. Plaintiffs cannot fill that economic analysis gap in this antitrust case with a handful of after-the-fact and off-point document citations. The Court should accordingly exclude Lee’s opinions that rely on the assertion that there is a commonly accepted understanding of what constitutes “open-web display advertising,” and that it is so distinct and valuable that there are no reasonable substitutes.

B. Lee’s Markets Are Unreliable Because He Excludes Competitors Based on the False Assumption that Ad Tech Tools Compete on a Single Feature—Facilitating “Open-Web Display Ads.”

The ad tech tools in Lee’s supposed markets perform many functions and facilitate many types of digital ads, not just “open-web display ads.” Br. 9-10. Unsurprisingly, Lee is unaware of any ad tech tool that facilitates only “open-web display ads.” Br. 7-9.

Plaintiffs concede that Lee has done no analysis of whether competition between ad tech tools is based only on this single feature he focuses on. Lee is adamant that his market definitions are for ad tech tools, not for “open-web display advertising,” Ex. 3, ¶¶ 93-94, and he agrees that the ad tech tools that make up his markets sell numerous types of advertising, not just “open-web display.” Ex. 3 ¶, 103. He further concedes that publishers and advertisers select ad tech tools based on functions other than the ability to transact “open-web display ads.” Ex. 1, ¶ 422 (some advertisers use Google Ads based on its function of transacting ads on Google’s owned and operated (O&O) properties); Ex. 8 at 97:17-98:17 (some publishers would choose “an app-only server like potentially AdMob”), 125:4-20 (does not know whether “advertisers do not care about other types of digital advertising through Google Ads” besides “open-web display”).

These admissions underscore the extreme irrationality of Lee’s purported markets because his markets for ad tech tools focus exclusively on their capacity to facilitate “open-web display ads” without any analysis that could show this drives the choice of tool. And Lee further excludes ad tech tools that facilitate other forms of digital advertising (indeed even other forms of display advertising) if they don’t also facilitate “open-web display,” without any analysis as to whether these alternative forms are reasonable substitutes. *E.g., Virginia Vermiculite, Ltd. v. W.R. Grace & Co. Conn.*, 108 F. Supp. 2d 549, 586-87 (W.D. Va. 2000) (substitutes for a variety of the common uses of vermiculite should be included in the market even where they did “not cover all of the potential end uses” of vermiculite); *see also It’s My Party II*, 811 F.3d at 683. Plaintiffs fail to acknowledge that the record evidence directly contradicts Lee: the commercial reality is that advertisers and publishers select ad tech tools based on an array of functionality. *E.g.*, Ex. 154 at -056, -065 (comparing performance metrics across functionalities, including O&O inventory transacted by Google, Facebook, and Reddit); Ex. 155 at -129 (TTD is the Navy’s “preferred

programmatic partner” because they have “massive reach” and “specialize in targeting across all channels”).

Plaintiffs’ counterarguments and case citations stand for the general proposition that different features of a multi-feature tool may nonetheless be in separate product markets.³ That fails to address the methodological gap here: that Lee sorted multi-feature tools based on a single feature without any actual analysis to justify that decision.

Plaintiffs criticize the Swiss Army knife analogy in Google’s opening brief, arguing the correct analogy is that Lee defines “a market for corkscrews, but that Google contends that knives, screwdrivers, and can openers must also be included in that market because Swiss Army knives contain all four tools.” Opp. 22. This is another sleight of hand by Plaintiffs. What Google is saying is that Lee has not shown—or even attempted to analyze—whether there is any basis to isolate the single feature he has selected. And unlike corkscrews, single-purpose “open-web display advertising” tools do not exist. Lee admits he knows of none, yet fails to do the work to justify overriding this glaring indicator that his markets do not exist. In any event, analogies aside, the dispositive point here is that Lee has failed to do the requisite analysis to justify his markets.

II. PROFESSOR LEE’S APPLICATION OF AN ENTIRELY QUALITATIVE HYPOTHETICAL MONOPOLIST TEST IS UNRELIABLE.

As set forth above, Lee’s market definition suffers from serious infirmities. For one, Lee fails to conduct any market analysis establishing that other forms of digital advertising are not reasonable substitutes for “open-web display advertising.” Similarly, Lee’s analysis cannot demonstrate whether the tools he excluded, tools that facilitate other forms of digital advertising,

³ In *United States v. Rockford Mem’l Corp.*, the court stated that acute care services and inpatient services are “not in the same product market merely because they have a common provider”—the hospital. 898 F.2d 1278, 1283-84 (7th Cir. 1990). In another, the court found that pens and post-it notes were not in the same product market as “capital goods” such as computers and office furniture. *Staples*, 970 F. Supp. at 1073-74.

are reasonable substitutes for the tools he included because they facilitate “open-web display.” Lee merely contends that “open-web display” is “distinct,” “important,” and “valuable,” Opp. Ex. A ¶¶ 261-62, without any actual market analysis accounting for the competition in digital advertising. This purely qualitative conclusion, by itself, is not a reliable method of defining a market. Lee’s attempt to gild his analysis by purporting to apply the HMT, a test that evaluates customer substitution patterns in response to a small but significant and nontransitory increase in price (“SSNIP”). Lee’s attempt is unavailing because, as Plaintiffs agree, he did not conduct any independent quantitative analyses of substitution.

Several circuit courts have squarely held that qualitative evidence alone is insufficient to define the market.⁴ These decisions requiring some quantitative testing as part of the economic analysis provide the proper rule because of the situation illustrated by this case: an economist is opining on market definition based on qualitative evidence that products are “distinct and valuable” to customers. That type of analysis is unreliable not only because it applies the wrong standard but also because it would lead to innumerable single markets of “distinct and valuable” products. Br. 19. Plaintiffs try to distinguish these cases prohibiting market definition based on wholly qualitative evidence, Br. 18, by asserting that Lee is not conducting a *Brown Shoe* analysis. Opp. 17. But the absence of both a quantitative analysis and a complete consideration of the *Brown*

⁴ *Ky. Speedway, LLC v. Nat’l Ass’n of Stock Car Auto Racing, Inc.*, 588 F.3d 908, 918 (6th Cir. 2009) (*Brown Shoe* factors insufficient to define market); *Reifert v. S. Cent. Wis. MLS Corp.*, 450 F.3d 312, 319-20 (7th Cir. 2006) (“While the ‘practical indicia’ named in *Brown Shoe* and *Beatrice Foods Co.* are important considerations in defining a market, they were never intended to exclude economic analysis altogether. Both opinions recognized the importance of economic analysis, including cross-price elasticity of demand”); *U.S. Horticultural Supply v. Scotts Co.*, 367 F. App. 305, 311 (3d Cir. 2010) (in defining market, practical indicia evidence insufficient in absence of economic evidence); *see also Teradata Corp. v. SAP SE*, 570 F. Supp. 3d 810, 838-39 (N.D. Cal. 2021) (excluding plaintiffs’ expert for putting forward a “flawed” analysis where he did not apply the HMT “as contemplated” by the merger guidelines).

Shoe factors renders Lee’s methods even more unreliable, not less. As is now clear, Lee is merely looking at a select few of the *Brown Shoe* indicia and claiming that he is implementing the HMT. This is an unreliable and unsupported method of market definition. *Ky. Speedway*, 588 F.3d at 918 (expert excluded for doing his “own version” of the HMT).

The cases Plaintiffs cite in support of their view that “open-web display” could be a separate submarket show the inadequacy of Lee’s analysis. Plaintiffs cite no cases where an expert opined on market definition by relying solely on the identification of “distinct and valuable” products. Instead, in *Staples*, for example, the court concluded that a submarket for sellers of consumable office supplies was appropriate only after considering extensive expert testimony and quantitative analysis. *F.T.C. v. Staples, Inc.*, 970 F. Supp. 1066, 1073-80 (D.D.C. 1997). The court noted that “litigants have not always been successful in proving submarkets” and distinguished prior cases by pointing to the “compelling” quantitative evidence that there was a submarket. *Id.* at 1081. Similarly, in *Sysco*, the court found that the FTC had proved the relevant submarkets based on detailed expert analyses, including SSNIP tests showing that other products in the broader market “were not adequate substitutes.” *F.T.C. v. Sysco Corp.*, 113 F. Supp. 3d 1, at 44, 48 (D.D.C. 2015). Finally, in *IQVIA*, the court concluded that the FTC had a “fair and tenable chance of” showing that programmatic advertising to healthcare professionals was a proper market based on a detailed market analysis by the FTC’s expert, who defined a market for the ads themselves and applied a detailed HMT using two separate quantitative tests. *F.T.C. v. IQVIA Holdings, Inc.*, 2024 WL 81232, at *1, 8-9, 26-27 (S.D.N.Y. Jan. 8, 2024).

Plaintiffs’ unpublished district court cases do not support their broad proposition that an expert applying the HMT can rely wholly on qualitative evidence, much less qualitative evidence of product differences. Plaintiffs do not contest that courts consistently characterize the HMT as

a quantitative analysis. Br. 17 (collecting cases). Several of Plaintiffs’ own cases describe the HMT as a “quantitative” analysis. *See F.T.C. v. Peabody Energy Corp.*, 492 F. Supp. 3d 865, 885 (E.D. Mo. 2020) (“Courts have various tools with which to determine whether to adopt the FTC’s proposed relevant product market, including quantitative approaches, such as the hypothetical monopolist test.”); *IQVIA*, 2024 WL 81232, at *25 (describing HMT as “quantitative evidence”). In several of Plaintiffs’ cases, in addition to *IQVIA* discussed above, the government’s expert conducted a quantitative HMT and then relied on additional supplemental qualitative evidence. *United States v. Aetna, Inc.*, 240 F. Supp. 3d 1, 33-40 (D.D.C. 2017); *F.T.C. v. Swedish Match*, 131 F. Supp. 2d 151, 160-62 (D.D.C. 2000); *Polypore Int’l, Inc. v. F.T.C.*, 686 F.3d 1208, 1217-18 (11th Cir. 2012) (empirical evidence of substitution from price increases).

For a couple of Plaintiffs’ other cases, those courts appear to be more tolerant of qualitative evidence than the preponderance of courts, but even there, the experts relied on evidence far more substantial than an analysis of whether products are distinct and valuable. *E.g., Rebotix Repair, LLC v. Intuitive Surgical, Inc.*, 2022 WL 3225366 at *4-6 (M.D. Fla. Aug. 10, 2022) (defendant had an over 99% market share for a robotic surgery instrument where “practical” indicia included that the only competitors lacked FDA approval and customer testimony that a 5% to 10% price increase would not lead to substitution because of the adverse medical consequences of the alternatives). And those cases directly conflict with the Sixth Circuit’s decision in *Speedway*. *Compare Ky. Speedway*, 588 F.3d at 918 (affirming exclusion of expert who “did not properly perform the SSNIP test” because he only “looked at average” prices, and also rejecting expert’s reliance on qualitative evidence), *with Sumotext Corp. v. Zooves, Inc.*, 2020 WL 533006, at *11-

12 (N.D. Cal. Feb. 3, 2020) (declining to exclude despite agreeing that the expert’s focus on “large price differential across products” was not a “SSNIP test”).⁵

Plaintiffs’ circuit court decisions fare no better. One case involved a research-and-development rather than a product market. *Illumina, Inc. v. F.T.C.*, 88 F.4th 1036, 1050 n.8 (5th Cir. 2023) (*Brown Shoe* factors permitted to define a “research-and-development market where most products have yet to reach the consumer marketplace” and “there are no prices from which to build a data set, and thus no way to run a hypothetical monopolist test analysis”).⁶ And while the Eleventh Circuit’s decision in *McWane, Inc. v. F.T.C.*, 783 F.3d 814, 829 (11th Cir. 2015) cited by Plaintiffs reached an opposite conclusion than the Third, Sixth, and Seventh Circuits, that decision is limited to a context where the reliability of the HMT was not being challenged and the qualitative evidence consisted of “persistent price differences,” “distinct customers, and a lack of reasonable substitutes.” Here, Lee has not presented evidence that ad tech tools that facilitate “open-web display advertising” have persistent price differences from tools that transact other digital advertising, identified customers for the different transactions, or analyzed substitution of multi-functional tools whose functions include “open-web display advertising.”

Plaintiffs also incorrectly assert that Google’s expert, Dr. Israel, has endorsed implementation of a qualitative HMT. That is not the case. Dr. Israel’s explanation that experts sometimes do not perform a “full quantitative hypothetical monopolist test,” Opp. 16, is not an

⁵ In a short order, the court in *US Airways, Inc. v. Sabre Holdings Corp.*, 2022 WL 986232 (S.D.N.Y. Apr. 1, 2022) did not specify what type of qualitative analysis was permissible.

⁶ See also *Geneva Pharms. Tech. Corp. v. Barr Lab’ys Inc.*, 386 F.3d 485, 496-98 (2d Cir. 2004) (*Brown Shoe* factors plus empirical evidence of inelastic demand sufficient to define submarket); *Knutson v. Daily Rev., Inc.*, 548 F.2d 795, 804 (9th Cir. 1976) (suggesting proof of *Brown Shoe* factors would have been sufficient to define submarket in dicta, where plaintiffs failed to produce any evidence of market definition).

endorsement of a wholly qualitative analysis. Dr. Israel has been consistent in his criticism of Lee's lack of quantitative analysis. Ex. 131, ¶ 147. Lee, in his rebuttal report, acknowledged this:

Contrary to Dr. Israel's assertions, implementing the HMT does not require independent "quantitative estimates of substitution" (Israel Report, ¶ 158). Thus, Dr. Israel is incorrect when he claims that I do not perform an HMT for the relevant product markets.

Ex. 3, ¶ 58 n.104. Dr. Israel was also consistent at his deposition that Lee failed to conduct a proper SSNIP analysis. Ex. 160 at 238:9-12 ("If Professor Lee wanted to argue that competition would be small enough such that they could impose a SSNIP, he should have shown that, but he didn't.").

In a final bid to save Lee's market definition, Plaintiffs point to Lee's use of "direct evidence" as another valid way to apply the HMT. This direct evidence includes what Plaintiffs call supra-competitive prices from a flawed analysis of Google's revenue share compared to other revenue shares. Ex. 1, ¶¶ 350, 508 n.739. Taking this analysis at face value, Plaintiffs' market definition analysis would amount to nothing more than a simple price comparison. Using Lee's methodology then, if a can of Coca Cola cost 5 cents more than a can of Pepsi, Coca Cola would be a monopolist in a relevant market.

Plaintiffs cite one unreported, out-of-circuit district court case to support this atypical implementation of the HMT. That case, however, does not stand for Plaintiffs' proposition. The defendants in *Mushroom* were not challenging whether direct evidence could be reliably used to implement the HMT; instead defendants only challenged whether the expert's direct evidence "fit" the case—i.e., was it relevant. *In re Mushroom Direct Purchaser Antitrust Litig.*, 2015 WL 5767415, at *18-19 (E.D. Pa. July 29, 2015) ("the fit inquiry goes primarily to relevance"). Moreover, the expert's "direct" evidence was actually independent quantitative analyses, *id.* (price correlations and regression analysis), none of which happened here.

III. PROFESSOR LEE'S WORLDWIDE MARKET IS ARTIFICIAL AND UNSUPPORTED.

Plaintiffs' argument in support of Lee's worldwide market reduces to this: because Google operates internationally, Lee's worldwide market is justified. Opp. 24. Such a rule would obviate the need for the geographic market definition exercise required under binding precedent for any case involving a defendant that operates globally. Moreover, Lee's worldwide market is divorced from the evidence in this case. Plaintiffs' have chosen to make their "alternative" market the primary market because Lee has calculated higher market shares for Google's ad exchange on a worldwide basis.

But it is not "sensible" to evaluate Google's conduct in a worldwide market. *Id.* As is clear from the face of the First Amended Complaint, Plaintiffs did not merely allege "markets nested within" one another. *Id.* A United States market was front and center with a worldwide market tacked on only as an alternative. *E.g.* FAC ¶¶ 2, 278-80, 311, 318, 325, 328, 331. There is no dispute among the parties that the United States is a relevant geographic market. Ex. 131, ¶ 374; Ex. 1, ¶ 401. Nor do the parties dispute that competitive conditions differ between a United States and a worldwide market. Opp. 25; Br. 22-23; FAC ¶ 280. And there is no question that Plaintiffs—the United States of America and 17 sovereign states—are enforcing this nation's antitrust laws. Opp. 26.

Plaintiffs also wrongly characterize the smallest market principle as a tool courts only occasionally use. Not so. Br. 23-24; *F.T.C. v. Tronox Ltd.*, 332 F. Supp. 3d 197, 202 (D.D.C. 2018) ("Recall that in defining a market for antitrust purposes, the narrowest market principle applies."). And as Plaintiffs' cases recognize, the government almost always follows the smallest market principle. *E.g.* Opp. 15 n.8 (citing *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 40 (D.D.C. 2017) ("the government 'may evaluate a merger in any relevant market satisfying the

hypothetical monopolist test,’ and will ‘usually do so in the smallest’ market that qualifies.”)⁷ But Lee conveniently jettisons the smallest market principle for his worldwide market.

Plaintiffs claim Lee justifiably disregarded the smallest market principle because ad tech customers are located globally and Google operates its business globally. Courts have previously rejected worldwide markets on the basis that software can be “sold worldwide.” *United States v. Bazaarvoice, Inc.*, 2014 WL 203966, at *27 (N.D. Cal. Jan. 8, 2014) (agreeing with the government that the United States is the relevant geographic market because, in part, of differences in language as well as recognition by market participants “that there are separate geographic markets”). A worldwide market is not appropriate where the competitive conditions vary greatly across geographic regions. Br. at 22-23. Therefore, by offering a worldwide market, Lee obscures rather than clarifies the issue for the factfinder.

In their Opposition, Plaintiffs cite *Microsoft* as well as two other cases where the relevant geographic market was worldwide. But that is unremarkable. In all of those cases, there is no indication that the parties disagreed on the proper geographic market definition. *E.g.*, *H&R Block*, 833 F. Supp. 2d at 50 n.7 (“The parties have stipulated that the relevant geographic market in this case is worldwide.”); *IQVIA*, 2024 WL 81232, at *11 (“The parties here agree—or at least do not meaningfully contest—that the geographic market is worldwide.”); *United States v. Microsoft*, 84 F. Supp. 2d 9, 14 (D.D.C. 1999) (no indication parties contested worldwide geographic market).

Lee’s abandonment of the smallest market principle can only be explained by Plaintiffs’ ploy to jack up market share numbers at trial. By any metric, Lee’s market shares for the ad exchange “market” are lower in the United States than they are worldwide. Ex. 3, Fig. 13.

⁷ See also Opp. 13, 24 (citing *F.T.C. v. Sysco Corp.*, 113 F. Supp. 3d 1, 26 (D.D.C. 2015) (same) and *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 59 (D.D.C. 2011) (same)).

Furthermore, Google’s share of the United States ad exchange market has never been higher than 56%, and has continuously declined since 2020. *Id.* These numbers are nowhere near the 70% market share necessary to stave off summary judgment. S.J. Reply at 21-22. Because the Fourth Circuit prohibits an antitrust plaintiff from using its expert to try, as is the case here, “to gerrymander its way to an antitrust victory without due regard for market realities,” Lee’s unreliable and irrelevant worldwide market share calculations should be excluded. *It’s My Party II* at 683 (permissible for district court to “rigorously challenge” an expert’s market definition analysis).

IV. LEE’S MARKET SHARE CALCULATIONS MUST BE EXCLUDED AS INCONSISTENT WITH HIS PROPOSED MARKET DEFINITIONS AND THE LAW.

A. Lee’s Market Share Calculations Are Unreliable Because They Do Not Measure the Markets He Defines.

Lee’s market share calculations should also be excluded as unreliable because they do not measure the markets he defines. While he defines markets for three types of ad tech tools, he calculates market shares based only on “open-web display ad” transactions, which are a subset of the transactions facilitated by those tools. Br. 9-10, 11-12, 24-25. Plaintiffs do not dispute that Lee’s calculations only measure market shares of transactions by the relevant ad tech tools for “open-web display ads,” not the full market shares of the tools at issue. Opp. 26-27. Plaintiffs argue, despite this admission, there is no mismatch: they say Lee was merely calculating market shares for the markets as he defines them—markets for “ad tech tools that serve and transact open-web display advertising.”⁸ *Id.* at 26. This position is inconsistent with Lee’s sworn testimony.

⁸ Plaintiffs are also wrong in claiming these shares are “often aligned” with “contemporaneous internal estimates.” Opp. 26. At his deposition, Lee did not know exactly what the “internal estimates” he cites were measuring, and conceded that others were not measuring what he purports

Lee testified that his markets “do not include the underlying display advertisements themselves.” Ex. 8 at 56:4-58:7; *see also id.* 64:16-65:15. He explained that the ability to facilitate “open-web display” transactions was only a “relevant criteria” for including a particular tool in his defined markets, and that his defined markets are made up of just the “ad tech tools” and not any particular type of transaction. *Id.* at 53:13-54:4, 90:22-92:1; *see also* Ex. 3, ¶ 94 (“these relevant product markets do not contain the underlying display advertisements themselves, and are thus distinct from a hypothetical product market containing *open-web display advertising*.”).

Lee’s explanation does not justify the mismatch. He testified that he restricted the calculation to “open-web display ads” because it “informs the extent to which DFP or a hypothetical monopolist of publisher ad servers would be able to exercise market power.” Ex. 8 at 92:9-16. His reasoning presupposes (1) that there are no reasonable substitutes for “open-web display ads”—an analysis that Lee failed to undertake, and (2) that customers select ad tech tools based on a single function—an analysis that Lee likewise failed to undertake. Because neither assumption is true, calculating market share based only on that single function obscures the true picture of the competition Google faces and cannot shed light on whether monopoly power exists. *E.g., R.J. Reynolds Tobacco Co. v. Philip Morris, Inc.*, 199 F. Supp. 2d 362, 394 (M.D.N.C. 2002), *aff’d* 67 F. App’x 810 (4th Cir. 2003) (market share calculations are intended to be useful as a proxy for monopoly power).

Plaintiffs do not dispute that market shares should measure shares of the actual markets at issue. *E.g.,* Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 535 (5th ed. 2023) (market share is meant to measure share “of

to be measuring. *E.g.,* Ex. 8 at 82:20-85:20 (unable to answer whether a document describing share of “addressable inventory” was for DFP or AdX or both combined, and concluding that it represented “a share of some metric of addressable inventory”).

the relevant antitrust market as a whole”). Yet by his own admission, Lee’s calculations reflect only each tool’s share of “open-web display ad” transactions even though Lee said “non-open web display transactions” are not “excluded from the relevant product markets” for tools. Ex. 3, ¶ 140. Given the fatal mismatch between the markets Lee defines for ad tech tools and the market shares Lee actually calculates, Lee’s market share calculations should be excluded as unreliable and misleading. *E.g., Am. Bearing Co. v. Litton Indus., Inc.*, 729 F.2d 943, 949 n.14 (3d Cir. 1984); *TYR Sport, Inc. v. Warnaco Swimwear, Inc.*, 709 F. Supp. 2d 821, 833-34 (C.D. Cal. 2010).

B. Lee’s Market Share Calculations Are Contrary to Law Because They Do Not Consider All Impressions That Can “Readily Shift” Into “Open-Web Display.”

Lee’s market share calculations are also contrary to law because they do not consider supply-side substitution, or the ability of suppliers (here, ad tech providers) to change what they produce (here, what types of ads they transact). *See F.T.C. v. Rag-Stiftung*, 436 F. Supp. 3d 278, 293 (D.D.C. 2020) (consideration of “supply-side substitution” is appropriate when suppliers can “readily shift” what they produce); *see also Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1436 (9th Cir. 1995). Properly accounting for supply-side substitution, Lee should have based his market share calculations on all ad impressions by tools that can “readily shift” to transacting more “open-web display” impressions. *E.g., Rebel Oil*, 51 F.3d at 1436.

Plaintiffs agree supply-side substitution is relevant “when suppliers are likely to quickly and profitably redeploy assets from an adjacent market into the relevant market in response to a price increase.” Opp. 28. They do not contest that Lee did not analyze supply-side substitution. To the contrary, they assert repeatedly that he only considered substitution by advertisers and publishers.⁹ *E.g., Opp. 2, 5.* Contrary to what the law requires, Plaintiffs then assert without

⁹ Telling as it is, even this assertion is false. As described above, Lee failed to perform any meaningful analysis of substitution even with regard to advertisers and publishers.

support that Lee need not account for supply-side substitution because ad tech tools facilitating different kinds of transactions are “not the same as supply-side substitution.” Opp. 28-29.

Lawyer argument cannot excuse Lee from doing the analysis that is legally required. Br. 25-28. In the single case Plaintiffs cite on this point, the court noted that both sides’ experts evaluated the need to account for supply-side substitution and relied on their expert analyses in determining whether supply-side substitution was relevant to the products at issue. *Rag-Stiftung*, 436 F. Supp. at 293-99. In finding that supply-side substitution did not weigh in favor of including different grades of hydrogen peroxide in the relevant market, the court in *Rag-Stiftung* carefully considered expert testimony—founded on detailed factual analysis—regarding the extent to which suppliers swing between production of different products, the difficulty and technical challenges involved, and the likelihood of profitability when switching production. *Id.* Plaintiffs’ bare assertion that the situation here is “not the same” cannot replace the necessary expert analysis.

CONCLUSION

For the above reasons, Google respectfully requests that the Court grant its motion and exclude the testimony of Prof. Robin S. Lee.

Dated: May 31, 2024

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